U.S. Environmental Protection Agency
Great Lakes National Program Office
Significant Activities Report

On the Web at:
www.epa.gov/glnpo

April-May 2003

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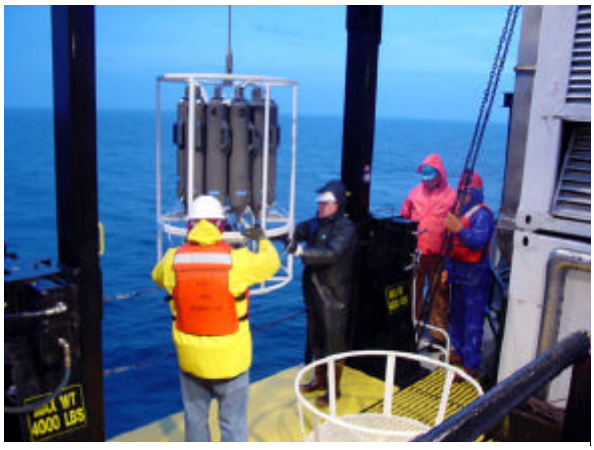
Lake Guardian at Work

After a delay of nearly two weeks, due to extensive ice on the Great Lakes, the Spring Water Quality Survey began on April 9th and was completed on May 5th. Samples were taken for investigation of water chemistry and biology. This is the latest survey in a long-term monitoring program that began in 1983. The surveys have documented trends in nutrient and chlorophyll levels in the lakes, and changes in their plankton communities. Samples were taken at from eight (Lake Ontario) to twenty stations (Lake Erie) in each of the five lakes. Lake Erie was sampled twice because of very high turbidity levels in the lake on the first pass. Turbidity readings did not decrease for the second sampling of Lake Erie. High turbidity levels often indicate high total phosphorus concentrations in the water. Researchers from Michigan Technological University tested new atmospheric sampling technology aboard the *R/V Lake Guardian* during the Lake Superior segment of the survey.
(Contact: Glenn Warren, 312-886-2405, warren.glenn@epa.gov)

Passing Milwaukee Harbor Light , *R/V Lake Guardian* begins Spring 2003 monitoring cruise

R/V Lake Guardian transiting from Lake Michigan to Lake Huron passes lake carrier in Straits of Mackinac

The activities of GLNPO's 180-foot research ship, the *R/V Lake Guardian*, can now be tracked online at: http://www.epa.gov/glnpo/guard/underway/index.html. The "*R/V Lake Guardian* at Work" pages will be



Rosette Water Sampler in Operation

updated on a weekly basis with new information collected on surveys and information about the operations of the ship. Visitors can read ship position reports which give a daily log of ship operations and can view photos of the ship's operations. Actual monitoring station data from the *Guardian*'s Seabird profiler (which measures temperature, turbidity and chlorophyll versus depth), will also be available. Other features of the "At Work" pages include the "Safety Tour" video of the *R/V Lake Guardian*, a feature on the dry-docking of the ship in September 2000, and the ship's schedule. (Contact: Pranas Pranckevicius, 312-353-3437, pranckevicius.pranas@epa.gov)

In preparation for this year's surveys, GLNPO updated and finalized its sampling manual, "Sampling and Analytical Procedures for GLNPO's Open Lake Water Quality Survey of the Great Lakes."

The new manual was used in procedural training for scientists aboard the *R/V Lake Guardian* on March 24th and 25th. The training involved:

- Review of ship operations, the SOP manual, and ship safety;
- Review of sampling and data collection activities (e.g., bridge, DO, board, biology, and physical and chemical parameters),
- Demonstrations of the SeaBird/Rosette sampling on station,
- Review of depth determination using thermocline profiles, and
- Review of the GLENDA Remote Data Entry Tool.

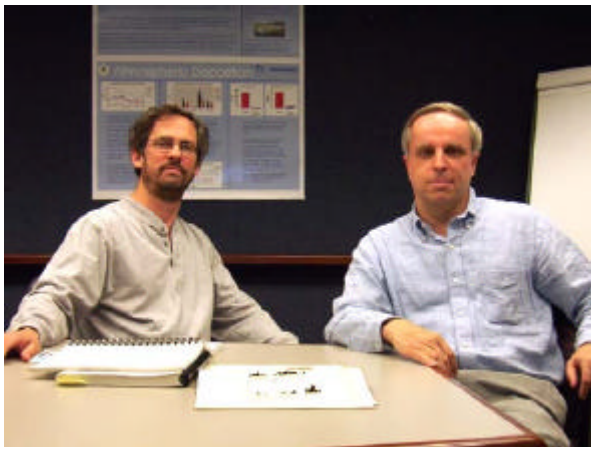
The training concluded with a performance assessment to assure a minimum level of competence in performing the activities involved in the survey and to acquaint survey participants with the new sampling manual. (Contact: Lou Blume, 312-353-2317, blume.louis@epa.gov)

Voluntary Mercury Initiative

On May 15th, GLNPO's Frank Anscombe and Alexis Cain of USEPA Region 5 Air Division received the **James W. Craig Pollution Prevention Leadership Award** from USEPA Administrator Christine Todd Whitman for "achieving a 75% reduction in mercury use from the chlor-alkali industry by creating a model voluntary initiative."

The amounts of mercury consumed by chlor-alkali factories are significant. Over a six-year period, 14 U.S. mercury cell chlor-alkali factories consumed an average of 160 tons per year, more than 10 tons each. For perspective, USEPA estimated that annual mercury air emissions from all U.S. industries were 157 tons during 1995.

In 1996, the U.S. chlor-alkali sector announced a voluntary program to go beyond compliance with regulations and reduce mercury lost during the production process. Since then, through 2002, firms have reduced replenishment mercury to 30 tons per year. Adjusting for factory closures, the rate of mercury loss from operating factories has fallen by 74 percent during the past 6 years.



Alexis Cain (left) and Frank Anscombe, recipients of USEPA's James W. Craig Pollution Prevention Leadership Award

Reductions reflect the efforts of the 1,000 men and women who work in mercury cell factories. Companies have developed new maintenance and operation procedures, improved the longevity of parts, and invested in new equipment. One worker invented a UV light that reveals mercury vapor sources. The industry provides an annual progress report to EPA.

EPA has contributed in several ways. The Agency has worked with the industry to define a useful indicator of its performance. EPA convened a scientific team that conducted an unprecedented 10-day fugitive air emissions study from inside an operating factory. Also, the Great Lakes Binational Toxics Strategy has provided a forum for the industry to share information on its activities to the public

In Anscombe's view, the chlor-alkali sector illustrates that "with a meaningful indicator of progress, self-regulation can be highly effective. It is much the best outcome for society if responsible parties determine how to prevent their pollution, in least cost ways, tailored to their individual circumstances."

Mercury vapor travels widely via the atmosphere. The United States receives air deposition of mercury from foreign emissions and vice versa. There are 100 to 200 mercury cell factories worldwide, in contrast to just nine now operating in the United States. A survey suggests that 17 factories in India consume 7 times more mercury than U.S. ones. Happily, the U.S. industry has begun dialogue with factories in developing countries so as to spread know-how regarding practical ways to prevent mercury losses.

U.S. industry representatives have benchmarked the best factories in Europe and Brazil, bringing back lessons that they are employing in this country. They are now looking to promote the sharing of such lessons to counterpart factories in other nations. "It would be welcome if chlor-alkali factories in all nations reduce their mercury vapor losses. It is praiseworthy that U.S. factories are convening practical international dialogue toward this goal," suggests Cain.

Information on the voluntary program of the mercury cell chlor-alkali industry may be viewed at: http://www.epa.gov.Region5/air/mercury/reducing.html#chloralkali. (Contacts: Frank Anscombe, 312-353-0201, anscombe.frank@epa.gov; or Alexis Cain, 312-886-7018, cain.alexis@epa.gov)

Proposals Break Record

As mentioned in last month's Significant Activities Report, the competition for up to $4,827,000 in grant funds closed on March 31st. In response to this year's competitive proposal solicitation, GLNPO received a record number and amount of proposals: 338 proposals, requesting a total of $28 million. The complete list of proposals received can be viewed on the Web at: http://www.epa.

gov/glnpo/fund/2003guid/idlist.html.

Proposals were requested through the "FY2003-2004 USEPA Great Lakes National Program Office Funding Guidance - Four Requests for Proposals." The process was different this year from that of the previous 10 years. It consolidated the annual GLNPO competitive solicitation with funds previously managed by USEPA Water programs in Regions 2 and 5 for projects for development and implementation of Lakewide Management Plans and Remedial Action Plans.
(Contact: Mike Russ, 312-886-4013, russ.michael@epa.gov)

Measuring Mud

The recently completed "Guidance Manuals to Support the Assessment of Contaminated Sediments in Freshwater Ecosystems" are now available electronically. The documents were developed by the Sustainable Fisheries Foundation through a 1999 grant from GLNPO and published as USEPA documents. The guidance manuals present an ecosystem-based approach for assessing and managing sediments, evaluates specific tests available for evaluating sediments, provides recommended procedures for designing and implementing sediment quality investigations, and presents procedures for interpreting the results of sediment quality investigations. The manuals are important resources for those involved in the assessment of sediments in the Great Lakes Basin. The manuals are available electronically on the web at: http://www.epa.gov/glnpo/sediments.html#Manual. A limited number of hard copies are also available. For hard copies, please e-mail your request to Larry Brail at lawrence.brail@epa.gov.
(Contact: Scott Cieniawski, 312-353-9184, cieniawski.scott@epa.gov)

Sediment Undergoing Bioassay Testing

Heavy Metal Dog

Clancy, a 4-year-old black Labrador Retriever mix, is removing mercury from Minnesota schools, while educating students about the olfactory prowess of dogs. An EPA grant to the Minnesota Pollution Control Agency (MPCA) is helping support a "Mercury-Free Zone Program."

Many high schools harbor some mercury, often in science lab thermometers and beakers. Every year, mishaps result in dozens of

Clancy Takes a Well-deserved Break
(Photo courtesy of Minnesota Pollution Control Agency)

Clancy and MPCA's Carol Hubbard Hard at Work
(Photo courtesy of Minnesota Pollution Control Agency)

mercury spills at schools across the United States, necessitating temporary closures and expensive cleanups. Sometimes these spills are not noticed. Because mercury is semi-volatile (partly a gas) at room temperature, an untended spill will contribute some mercury vapor to the air in a class-room. This vapor isn't easy to detect because mercury is odorless to humans.

The MPCA's program aims to ward off spills, by finding and removing mercury within schools. At the same time, the MPCA offers a short presentation on mercury and Clancy demonstrates his skill at detecting mercury vapor, offering interesting perspectives for students.

Through the efforts of Clancy and his MPCA team-mates:

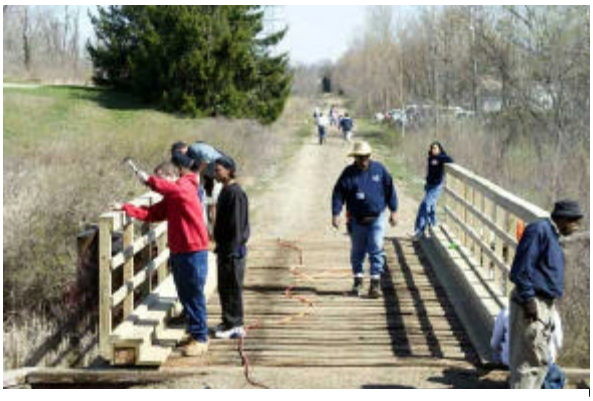
- 550 pounds of mercury have been removed from Minnesota schools,
- 176 (out of 1,800 schools) have thus far taken a mercury-free pledge, agreeing to eliminate high risk mercury containing equipment and all bulk mercury,
- 75 schools have been checked for mercury, and
- 8,963 students and teachers have been educated about the hazards and prudent management of mercury.

Clancy's work has been noticed by the media. Since October 2001, there have been 47 newspaper articles, 16 television spots, and 5 radio spots on Clancy's efforts to sniff out mercury from Minnesota schools.

Further information about the Mercury-Free Zone Program and Clancy is available on the MPCA's Web Site at: http://www.pca.state.mn.us/programs/mercury-free/index.html.
(Contact: Frank Anscombe, 312-353-0201, anscombe.frank@epa.gov)

The Green Way

GLNPO funding helped the Community Foundation for Southeast Michigan hold two workshops on greenways. The workshops, held in April of 2002, brought national renowned greenways expert Charles Flink to present information about the economic benefits of greenways to Southeast Michigan. The workshop also provided greenways practitioners with a template of what to look for in the planning of greenways in their communities. More than 200 people attended the first workshop to learn about economic benefits of greenways, land



Putting finishing touches on Polly Ann Trailway greenway project in Oakland County, Michigan
(Photo courtesy of Community Foundation of Southeast Michigan)

use issues, greenways design and construction, community engagement, and funding opportunities for greenways. Eighty people were invited to attend the second workshop to discuss how to plan greenways, how to underwrite the costs, community outreach and engagement, and issues as basic as the type of materials used in greenways construction. A workbook was distributed to all who came at no cost to the attendees. (Contact: Karen Rodriguez, 312-353-2690, rodriguez.karen@epa.gov)

Assuring Quality

In an effort to ensure that all the work that the Great Lakes National Program does is of documented high quality, GLNPO developed a new Quality Management Plan (QMP). The QMP describes the daily activities that GLNPO implements to ensure quality management and add value to our program and decisions. The QMP was approved by USEPA's Office of Environmental Information in April 2003.

USEPA's Great Lakes National Program Office

The QMP defines GLNPO's quality system, describing how GLNPO will plan, implement, document, and assess its quality system to support its mission. The document also communicates the policy and provides guidance on GLNPO's quality management system to all personnel associated with GLNPO. GLNPO's innovative quality management policy focuses on four operating principles: assistance, flexibility, value-added, and continuous improvement. These operating principles guide GLNPO quality staff in implementing the quality system on a daily basis. GLNPO's quality system also is based on a graded approach. In GLNPO's quality system, requirements are commensurate with the:

- Importance of the work,
- Availability of resources,
- Unique needs of the organization, and
- Consequences of potential decision errors.

GLNPO's QMP fits into the USEPA's overall Agency-wide Quality System. The Agency-wide quality system management system provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for USEPA. The intent is to develop a consistent approach to environmental decisions that ensures the collection of supporting data that are scientifically sound, legally defensible, and of known and documented quality. The USEPA Office of Environmental Information's Quality Staff is responsible for developing, coordinating and directing the implementation of the Agency's QA program.

GLNPO's Quality Management Plan is available on the Internet at: http://www.epa.gov/glnpo/qa/qmp/index.html. The documents that make up the QMP are very large, so if you have difficulty accessing these documents from the Web Pages, you can request a CD version of the QMP from Marybeth Giancarlo, 312-886-2253, giancarlo.marybeth@epa.gov.
(Contact: Lou Blume, 312-353-2317, blume.louis@epa.gov)

Lou Blume hard at work providing Quality Assistance

Quality Assurance/Assistance?

GLNPO's QA Manager, Lou Blume, presented a paper with that title at the USEPA 22nd Annual National Conference on Managing Environmental Quality Systems. He noted that too often researchers or decision makers are asked to develop a Quality Management Plan and believe that the process of doing this is just another requirement to "get the money" or to make a bureaucrat happy. These feelings typically are driven by past experiences of working with quality documentation or quality managers that were inflexible and rigid in their interpretation of requirements with the hopes of guaranteeing or assuring success in a project, similar to an insurance policy or a guarantee.

Mr. Blume said that the Agency's current Quality System developed within the constraints of the ISO 9000:2000 and ISO 9001: Quality Management Systems-Requirements provides for a time saving cost effective planning and implementation process that adds value to the decisions or questions being addressed. Further the Quality staff employed within a successful organization provide a critical assistance role to the researcher or environmental manager. As an organization matures in applying these successful quality systems in a flexible manner that focuses on assistance, the historic polarization between the client and the quality assistors is greatly reduced. This promotes continued interaction between the client and quality assistors well beyond the initial award phase of the project to the reporting, assessment, and peer review phases. This continued interaction helps in assuring that results are consistent with the requirements of OMB's new Information Quality Guidelines.
(Contact: Lou Blume, 312-353-2317, blume.louis@epa.gov)

North American Toxics Reduction

The Great Lakes Binational Toxics Strategy (GLBTS, U.S.-Canada) held its semi-annual Stakeholder Forum jointly with the Commission for Environmental Cooperation's (CEC, U.S.-Canada-Mexico) Sound Management of Chemicals (SMOC) meeting in Windsor, Ontario, Canada on May 13th and 14th.

GLBTS and CEC logos

Approximately 80 people attended the two-day SMOC meeting, including representatives from government, industry, and non-governmental organizations from the U.S., Canada, and Mexico. Danny Epstein, the Canadian Co-Chair of the GLBTS informed the participants about the Strategy's driving force, focus and accomplishments to-date. More importantly, natural program synergies between the CEC's SMOC and the GLBTS were identified which underlined the need to work collaboratively in addressing persistent, bioaccumulative and toxic

substances.

Other Presentations included:

- An overview of the CEC SMOC program,
- "Frontera 2012," a binational (U.S.-Mexico) strategy to address pollutants across the U.S.-Mexican border,
- Aboriginal perspectives on toxic substances from representatives located within each of the three nations represented by the CEC:
- Shawna Larson, Alaska Community Action on Toxics, Indigenous Environmental Network,
- Stephanie Meakin, Inuit Circumpolar Conference,
- Angel Valencia, Yeomem Tekia Foundation (an affiliate member of the International Indian Treaty Council),
- An overview of the upcoming implementation of the Great Lakes Legacy Act,
- Long-range transport of emerging chemicals,
- and reports on progress in GLBTS efforts to reduce levels of PCBs, mercury, PAHs, dioxins and furans.

GLBTS representatives will continue coordination with CEC efforts by attending CEC stakeholder forums. One joint project of the CEC and GLBTS in the works is a long-range transport workshop planned for September 2003 in Ann Arbor, Michigan.

Proceedings and copies of the presentations will be available on the GLBTS web-site, http://www.epa.gov/glnpo/bns/index.html, shortly.
(Contact: Ted Smith, 312-353-6571, smith.edwin@epa.gov)

Mudpuppy crew ready to take sediment core sample

Mudpuppy Starts 2003 Surveys

On May 5th to 8th, GLNPO's specially-built sediment sampling boat, the *R/V Mudpuppy*, was in Ludington, Michigan to help the Michigan Department of Environmental Quality (MDEQ) with sediment sampling on Pere Marquette Lake. The field crew collected a total of ten sediment cores throughout the lake for laboratory analysis for PCBs, PAHs, and heavy metals. The main purpose of the sampling was to determine if the sediments are a source of PCB contamination in the fish within Pere Marquette Lake. The MDEQ fish monitoring program has detected elevated levels of PCBs in fish tissue samples and is trying to find out whether the elevated levels are due to background Lake Michigan contamination or are caused by a more local source.

Next, the *Mudpuppy* was off to the Ashtabula River in Ohio to collect sediment samples from the Ashtabula River in Ohio. The sampling survey was conducted to help the U.S. Army Corps of Engineers determine the design of the dredged material discharge water and leachate water treatment facilities they'll need when they dredge the Ashtabula River in Ashtabula, Ohio. From May 12th to 15th, the *Mudpuppy* was used to col-

lect a total of 80 cores from roughly 20 locations along the river, with core tube lengths of nearly 15 feet of sediment at a few locations. The sediment cores were capped and ferried to shore for processing and transportation to a laboratory for analysis. This effort will provide the analytical data necessary for the technical support of the dredging, handling, dewatering, water treatment, transport, and disposal of sediments that are scheduled to be dredged by the Corps from the Ashtabula River. (Contacts: Scott Cieniawski, 312-353-9184, cieniawski.scott@epa.gov; Demaree Collier, 312-886-0214, collier.demaree@epa.gov)

Detroit River PCB Assessment

The report entitled "Evaluating Ecosystem Results of PCB Control Measures Within the Detroit River-Western Lake Erie Basin" is now available in hard copy and on the Internet. Funded by a grant from GLNPO, Wayne State University wrote the report to help establish a surveillance network for the Detroit River and Lake Erie watershed to monitor the water quality of these areas. The network will assist in evaluating whether or not recent source loading reductions and sediment remediation for PCBs had a beneficial impact on this ecosystem.

The report is based on information from a binational workshop held at the Great Lakes Institute in Windsor, Ontario in June of last year. The workshop's purpose was to address PCB monitoring, modeling, research, remediation actions and ecosystem impacts within the Detroit River-western Lake Erie basin. The workshop brought together approximately 50 technical experts from the United States and Canada to present and discuss important results from their research. These same experts then participated in one of three different breakout sessions to develop important recommendations and advice for future monitoring, modeling and management of PCBs within the basin.

Detroit River and Ambassador Bridge
(photo courtesy of NASA)

To obtain a hard copy of the report, please contact Larry Brail by phone at 312-886-7474, or by Email at brail.lawrence@epa.gov.

The report is available on the Internet at: http://www.epa.gov/glnpo/sediment/pcbreport.pdf.
(Contact: Demaree Collier, 312/886-0214, collier.demaree@epa.gov).

Aquatic Invasive Species Summit

On May 14th and 15th, nearly 70 technical experts participated in a conference in Chicago, Illinois to meet the aquatic invasive species issue head-on. The experts discussed potential solutions for stopping the exchange of non-native organisms between the Great Lakes and Mississippi River basins via the Chicago Sanitary and Ship Canal. Zebra mussels and the round goby have already moved from the Great Lakes through the Ship Canal to the Mississippi basin, and 2 species of Asian carp are currently moving up the Illinois River towards the Great Lakes basin. An electrical barrier was put in place last year by the U.S. Army Corps of Engineers as a first line of defense

The round goby, a non-native invader of the Great Lakes and Mississippi River basins

in keeping the carp from moving into the Great Lakes system. However, it is acknowledged that a single barrier cannot be 100% effective at preventing the exchange of all invasive species and life stages. The objective of the conference was to come up with options for long-term solutions that would prevent the exchange of all invasive species through the Ship Canal.

A number of ideas were proposed during the summit including:

- Physical separation of the waters of both systems, while maintaining commercial and recreational traffic,
- Placement of additional technological barriers,
- Formation of an eradication zone, and
- Physical removal of organisms by filtration or a bypass.

The summit was hosted by the City of Chicago and U.S. Fish and Wildlife Service and supported by GLNPO. Chicago Mayor Richard M. Daley provided opening remarks for the summit. Mayor Daley expressed great concern over the havoc that Asian carp would wreak on Lake Michigan if they were to inhabit the lake.
(Contact: Marc Tuchman, 312-353-1369, tuchman.marc@epa.gov)

We welcome your questions, comments or suggestions about this month's Significant Activities Report. To be added to or removed from the Email distribution of the Significant Activities Report, please contact Tony Kizlauskas, 312-353-8773, kizlauskas.anthony@epa.gov.